

Work Order ID 161782

Tuesday, May 23, 2017 9:41:12 AM

161782

Page 1

Item ID: 647.7911 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Bracket
Start Date: 6/1/2017 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 6/9/2017 Req'd Qty: 4.00 ***4*** Customer:

Reference: DAS
21
Approvals: Process Plan: 9-89 Date: MAY 23 2017 Tooling: Date: Run Start ***NR1***
QC: Date: SPC (Y/N): Date: Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr								
647.7900	N/C								

110 0.00
110
Waterjet Memo 0.11
FLOW CNC Waterjet 1-Cut as per Dwg
Dwg Rev: N/C
Prog Rev: N/C
2-Deburr if necessary

(4) 06/17/05/27

120 0.00
120
QC Memo 0.00
Quality Control

(4) 06/17/05/27

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coor. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐
Design	☐	Operator	☐	Bending	☐	Set-up	☐
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :			
Misidentified	☐	Past Due	☐				

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 161782

161782

Page 3

Tuesday, May 23, 2017 9:41:12 AM

Item ID: 647.7911 Accept *N900040100* Setup Start *NS1*
Revision ID: Stop *NS2*
Item Name: Bracket
Start Date: 6/1/2017 Start Qty: 4.00 *4* Cust Item ID:
Required Date: 6/9/2017 Req'd Qty: 4.00 *4* Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

160	Outsource process-Anodize per QSI017 4.1.10.1	0.00				Y		JUN 16 2017	DAS 13
-----	---	------	--	--	--	---	--	-------------	-----------

160

Outsource4

Outsource process - Anodize

Memo

ISSUE P/O: 36731
HARD ANODIZE, COLOR BLACK AS PER DWG.(SEE NOTE 2)

170	Receive & Inspect for Damage & Mat'l Certs	0.00							
-----	--	------	--	--	--	--	--	--	--

170

Packaging

Packaging

Memo

0.00

4x 2 177-10

180	QC5- Inspect part completeness to step on W/O	0.00							
-----	---	------	--	--	--	--	--	--	--

180

QC

Quality Control

Memo

0.00

1.6 mils thickness primer

Y
DAS
38
9-89
JUL 10 2017

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐			
Design ☐	☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐			
Doc/Data ☐	☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐			
Equip/Tooling ☐	☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐			
Handling/Pre ☐	☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐			
Material ☐	☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐			
Internal Transport ☐	☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐			
Tribal Knowledge ☐	☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐			
LOA ☐	☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐			
Substation ☐	☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐			
Past Expiry Date ☐	☐	Manufacturing Process ☐	OTHER :						
Misidentified ☐	☐	Past Due ☐							

Work Order ID 161782***161782***

Page 4

Tuesday, May 23, 2017 9:41:12 AM

Item ID: 647.7911 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Bracket
Start Date: 6/1/2017 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 6/9/2017 Req'd Qty: 4.00 ***4*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190 *190* SprayPaint Spray Painting	Memo PRIME IAW MIL-P-23377J TYPE1 CLASS N AS PER DWG. (SEE NOTE 2) CARDINAL 4860-50 PRIMER BATCH: _____	0.00 0.00							
200 *200* QC Quality Control	QC14- Inspect Spray Paint Memo	0.00 0.00							
210 *210* Packaging Packaging	Identify as per dwg & Stock Location: _____ Memo ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***	0.00 0.00							

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 161782***161782***

Page 5

Tuesday, May 23, 2017 9:41:12 AM

Item ID: 647.7911 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Bracket
Start Date: 6/1/2017 Start Qty: 4.00 ***4*** Cust Item ID:
Required Date: 6/9/2017 Req'd Qty: 4.00 ***4*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	QC21- Final Inspection - Work Order Release	0.00							
220									
QC	Memo	0.00							
Quality Control									

U 17.87.11

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : ☐							

Picklist Print

Tuesday, May 23, 2017 9:41:11 AM

Page 1

Work Order ID: 161782

161782

Parent Item: 647.7911

647 7911

Parent Item Name: Bracket

Start Date: 6/1/2017

Required Date: 6/9/2017

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A 12.10.03 NEW ISSUE DD VERF:JFS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M2024T3S.090		Purchased		No		110	sf	46.6700	0.0775	0.326316			
M2024T3S 090									**				
2024-T3 .090 sheet													

05/17/2017

Location

Loc Qty

Loc Code

MAT021

46.67

123287

13.97

m130387

32.7

.4

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval																																																									
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

NOTES:

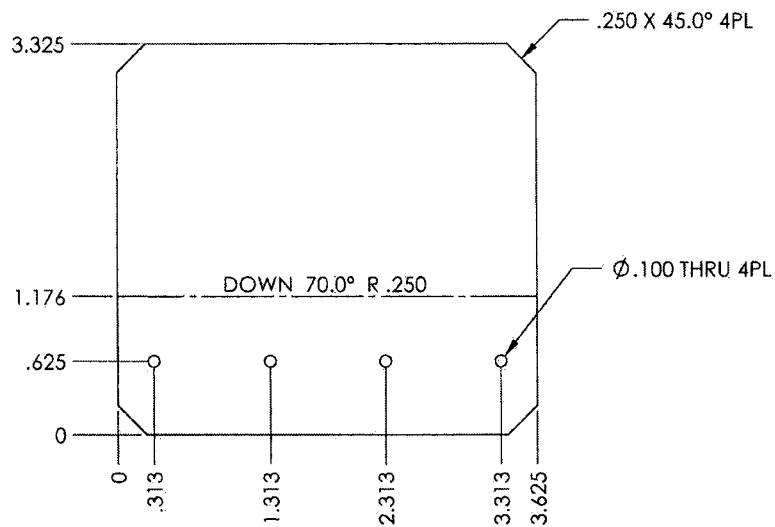
1. MATERIAL: ALUMINUM 2024-T3 PER AMS-QQ-A-250/4
2. FINISH: ANODIZE PER MIL STD-A-8625, TYPE III, CLASS 2, COLOR BLACK;
CARDINAL 4860-50 PRETREATMENT PRIMER
PRIME IAW MIL-P-23377J TYPE I CLASS N
3. DEBURR AND BREAK ALL SHARP EDGES
4. IDENTIFY IAW MPP-120

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

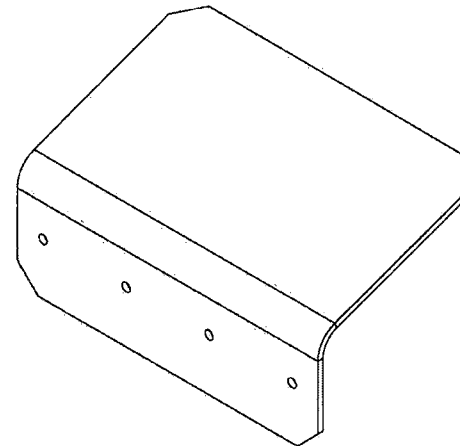
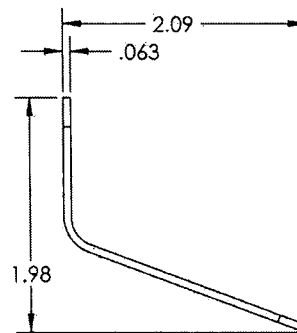
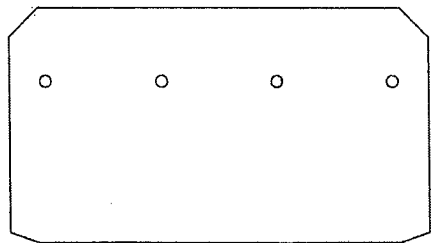
WORK ORDER
NO. 161782 MS
170522

		647.7919	SHIM		△	△	△
		647.7918	BRACKET		△	△	△
		647.7917	BRACKET		△	△	△
		647.7916	BRACKET		△	△	△
		647.7915	BRACKET		△	△	△
		647.7914	BRACKET		△	△	△
		647.7913	DOUBLER		△	△	△
		647.7912	CLIP		△	△	△
		647.7911	BRACKET		△	△	△
		647.7910	ANGLE BRACKET		△	△	△
F/N	PART #	DESCRIPTION			MAT'L	SPEC	
QTY		PARTS LIST					
NEXT ASSY (S)				APICAL INDUSTRIES			
647.7300				2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300			
ORIGINAL DATE 12-23-09 DRAWN BY CRICKLER P. ANDERSON P. BRAVO P. BRAVO APPROVAL CONTRACT NO. B				SHEET METAL SIZE: CAGF CODE DWG. NO. 647.7900			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ARE: 1 PLACE DECIMALS ± 0.1 2 PLACE DECIMALS ± 0.05 FINISH:				SCALE NONE		SHEET 1 OF 9	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



FLAT PATTERN

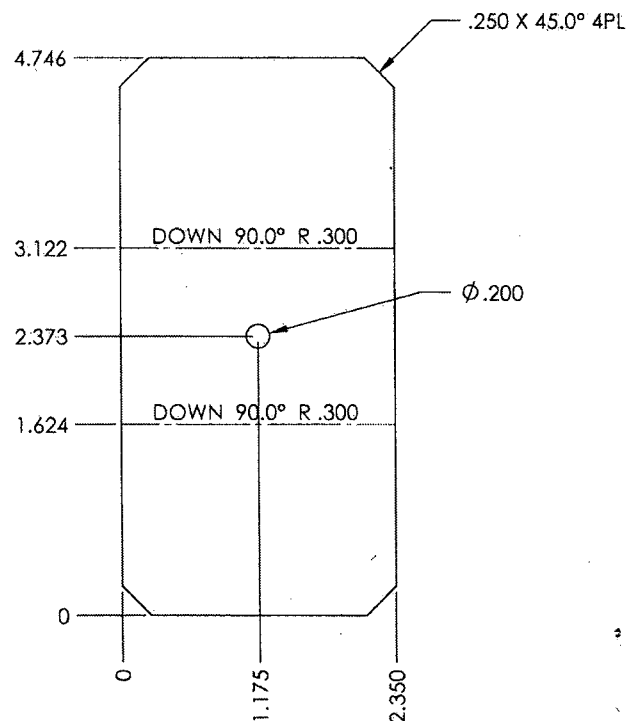
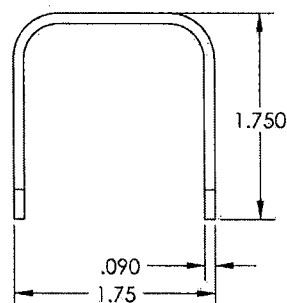


647.7910

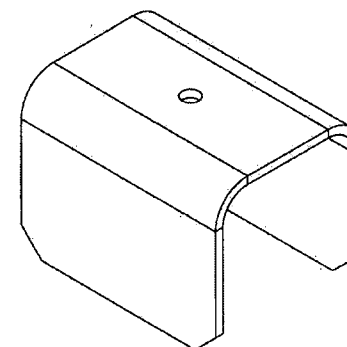
ORIGINAL DATE 11/20/09		APICAL INDUSTRIES	
DRAWN BY: J. CRICKER		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: P. BRAVO		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAVO		SHEET METAL	
CORRECTIONS:			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		REV. N/C	
SEE: 07M26	DWG. NO. 647.7900	SCALE: NONE	SHEET 2 OF 9

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



FLAT PATTERN

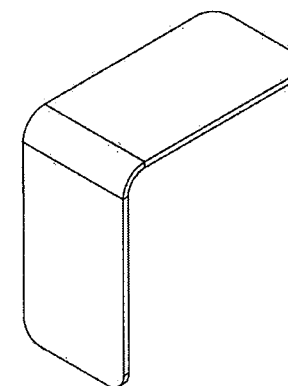
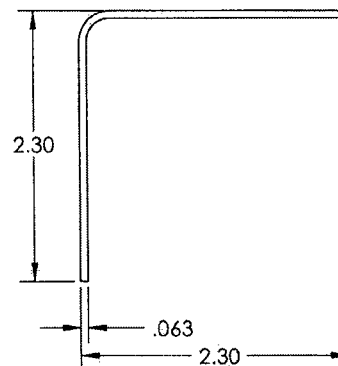
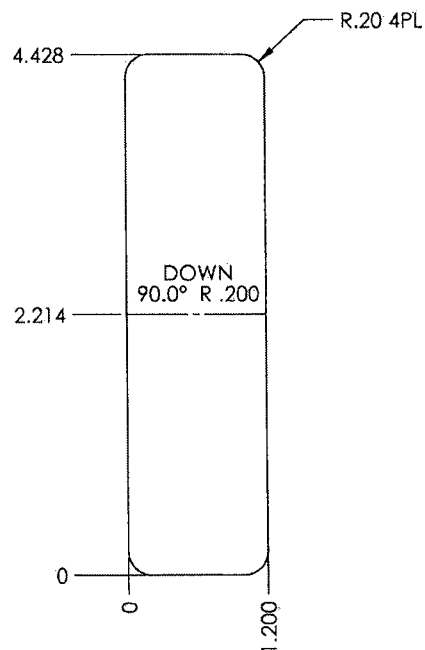


647.7911

ORIGINAL DATE (DD-MO-YR) 11-29-06		APICAL INDUSTRIES	
DRAWN BY: J. HICKER		2608 TEMPLE HEIGHTS DR.	
E. ANDERSSON P. BRAVO		OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAVO		SHEET METAL	
(11/29/06)			
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SHEET 3 OF 9	REV. N/C
SHEET 3 OF 9		SCALE NONE	DWG. NO. 647.7900

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

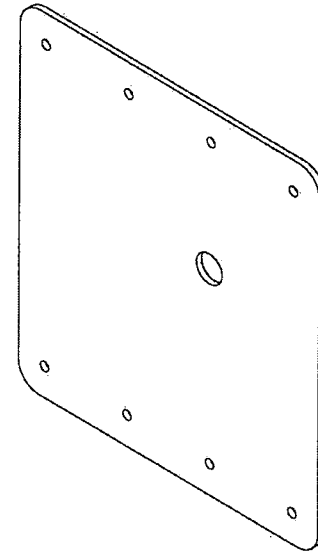
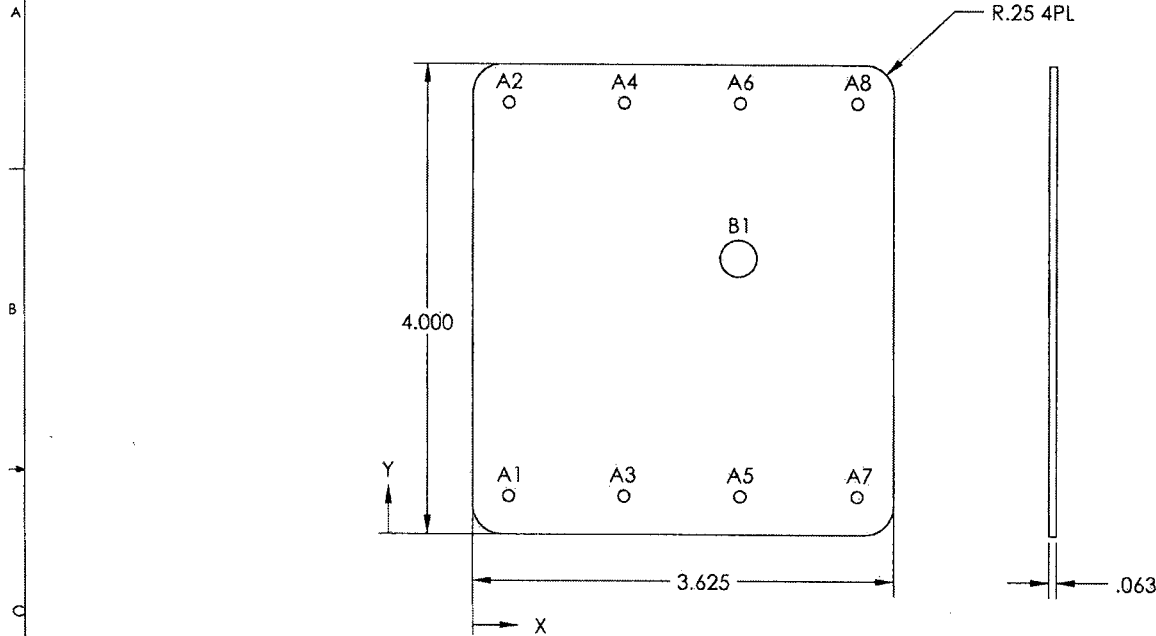


647.7912

ORIGINAL DATE 11-23-99		APICAL INDUSTRIES	
DRAWN BY E. ANDERSON / P. BRAYO		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAYO 11-23-99		SHEET METAL	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SIZE 8	REV. N/C
CAGE CODE 07M26		DWG. NO. 647.7900	SHEET 4 OF 9
SCALE NONE			

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF
APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



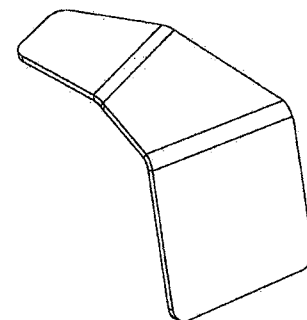
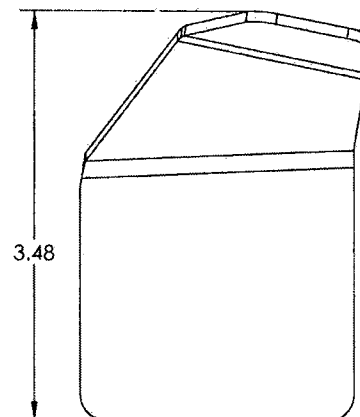
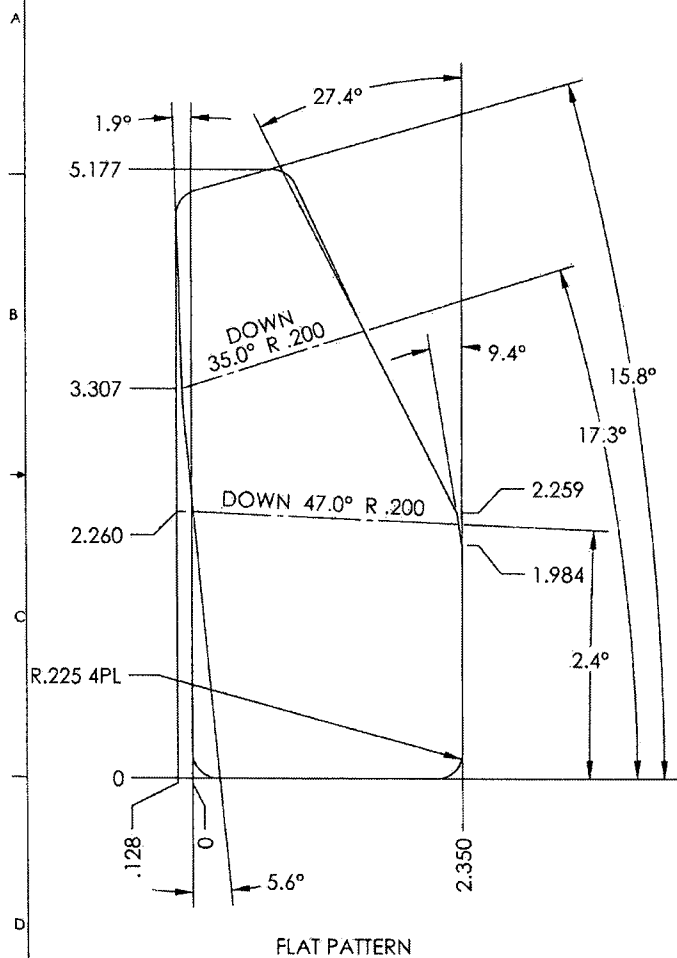
647.7913

TAG	X LOC	Y LOC	SIZE
A1	.313±.002	.325±.002	Ø.100
A2	.313±.002	3.675±.002	Ø.100
A3	1.313±.002	.325±.002	Ø.100
A4	1.313±.002	3.675±.002	Ø.100
A5	2.313±.002	.325±.002	Ø.100
A6	2.313±.002	3.675±.002	Ø.100
A7	3.313±.002	.325±.002	Ø.100
A8	3.313±.002	3.675±.002	Ø.100
B1	2.300±.002	2.350±.002	Ø.313

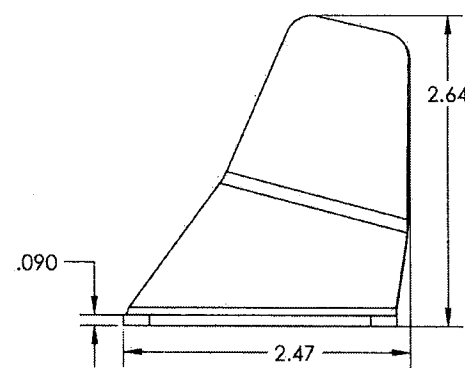
ORIGINAL DATE 11-09-09		APICAL INDUSTRIES	
DRAWN BY L. ANDERSEN		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
CHECKED BY P. BRAYO		SHEET METAL	
DRAWING APPROVAL P. BRAYO		REV. N/C	
CONTRACT NO.		SCALE NONE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SIZE B	DWG. NO. 647.7900
		SHEET 5 OF 9	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

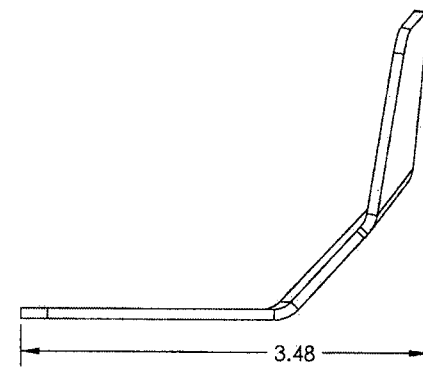
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



647.7914
647.7915 OPPOSITE



647.7914 SHOWN
647.7915 OPPOSITE



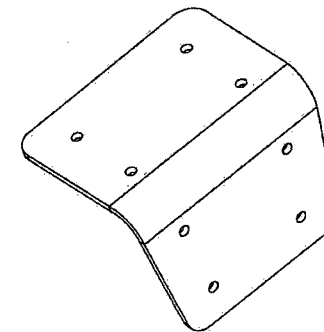
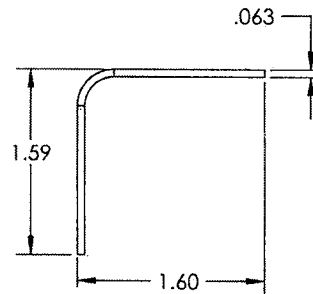
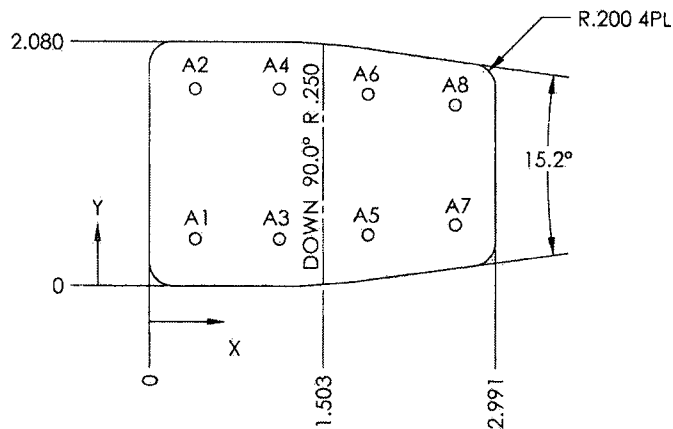
ORIGINAL DATE (M/D/Y): 11-23-09			
DRAWN BY: CHICKER			
E. ANDERSSON (P. BRAVO)			
DRAWING APPROVAL			
P. BRAVO			
11-23-09			
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°			
DEL	CAGE CODE	DWG. NO.	REV.
B	07M26	647.7900	H/C
SCALE: NONE			SHEET 6 OF 9

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

SHEET METAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



647.7916

FLAT PATTERN

TAG	X LOC	Y LOC	SIZE
A1	.400±.002	.400±.002	Ø.100 THRU
A2	.400±.002	1.680±.002	Ø.100 THRU
A3	1.125±.002	.400±.002	Ø.100 THRU
A4	1.125±.002	1.680±.002	Ø.100 THRU
A5	1.891±.002	.440±.002	Ø.100 THRU
A6	1.891±.002	1.640±.002	Ø.100 THRU
A7	2.646±.002	.528±.002	Ø.100 THRU
A8	2.646±.002	1.553±.002	Ø.100 THRU

ORIGINAL DATE: 11-23-09
 DESIGNED BY: J. HICKER
 DRAWN BY: F. ANDERSSON
 DRAWING APPROVAL: P. BOVA
 CHECKED: J. BOVA
 CONTRACT NO.

APICAL INDUSTRIES
 2608 TEMPLE HEIGHTS DR.
 OCEANSIDE, CA 92056-3512 (760)724-5300

SHEET METAL

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 2 PLACE DECIMALS ±.01
 3 PLACE DECIMALS ±.005
 ANGLES ±.5°

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

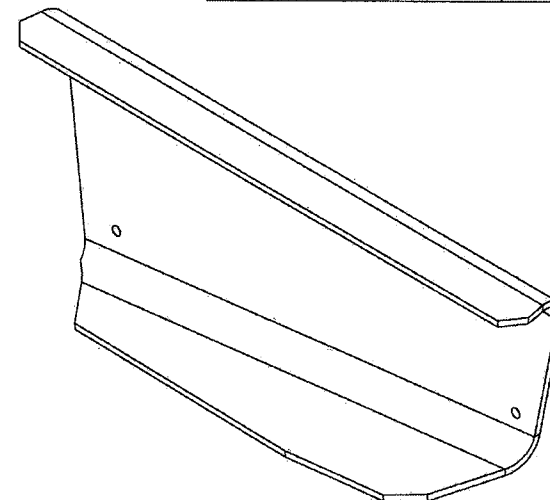
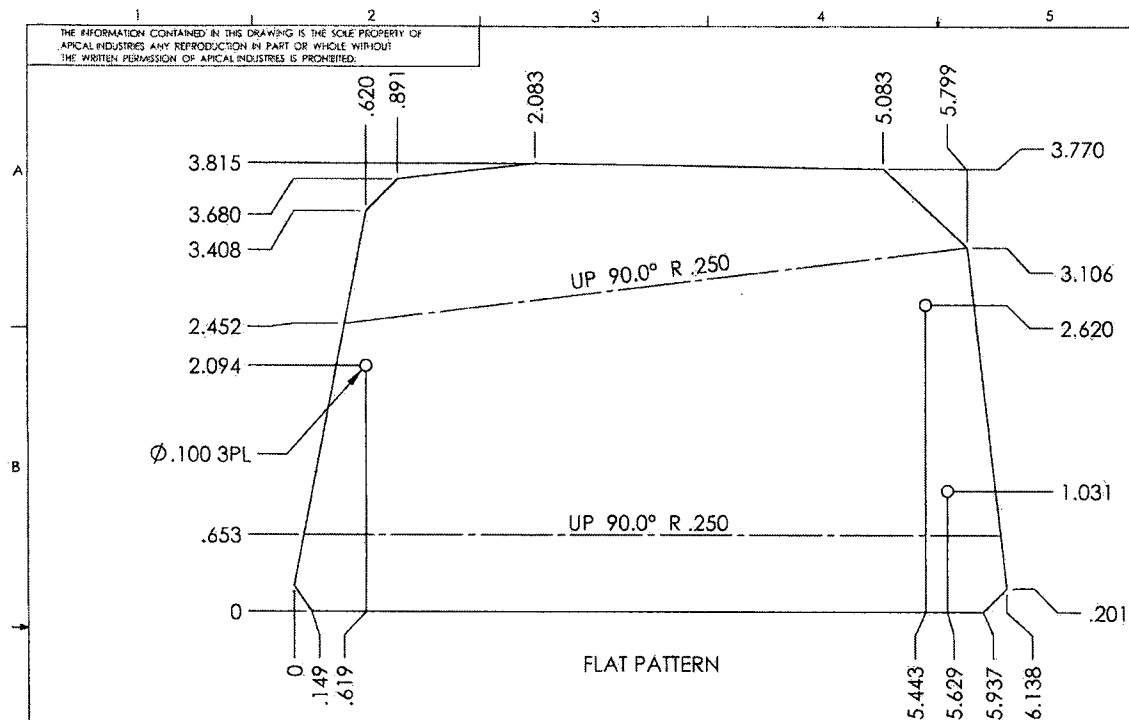
REV.	DESCRIPTION	DATE	APPROVED

REV.	DESCRIPTION	DATE	APPROVED

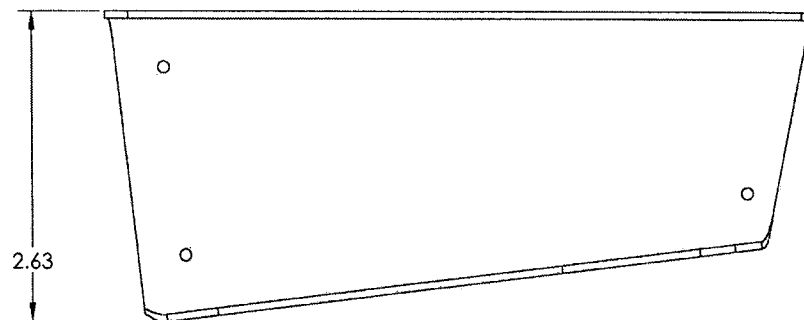
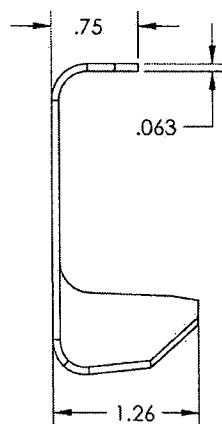
REV.	DESCRIPTION	DATE	APPROVED

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



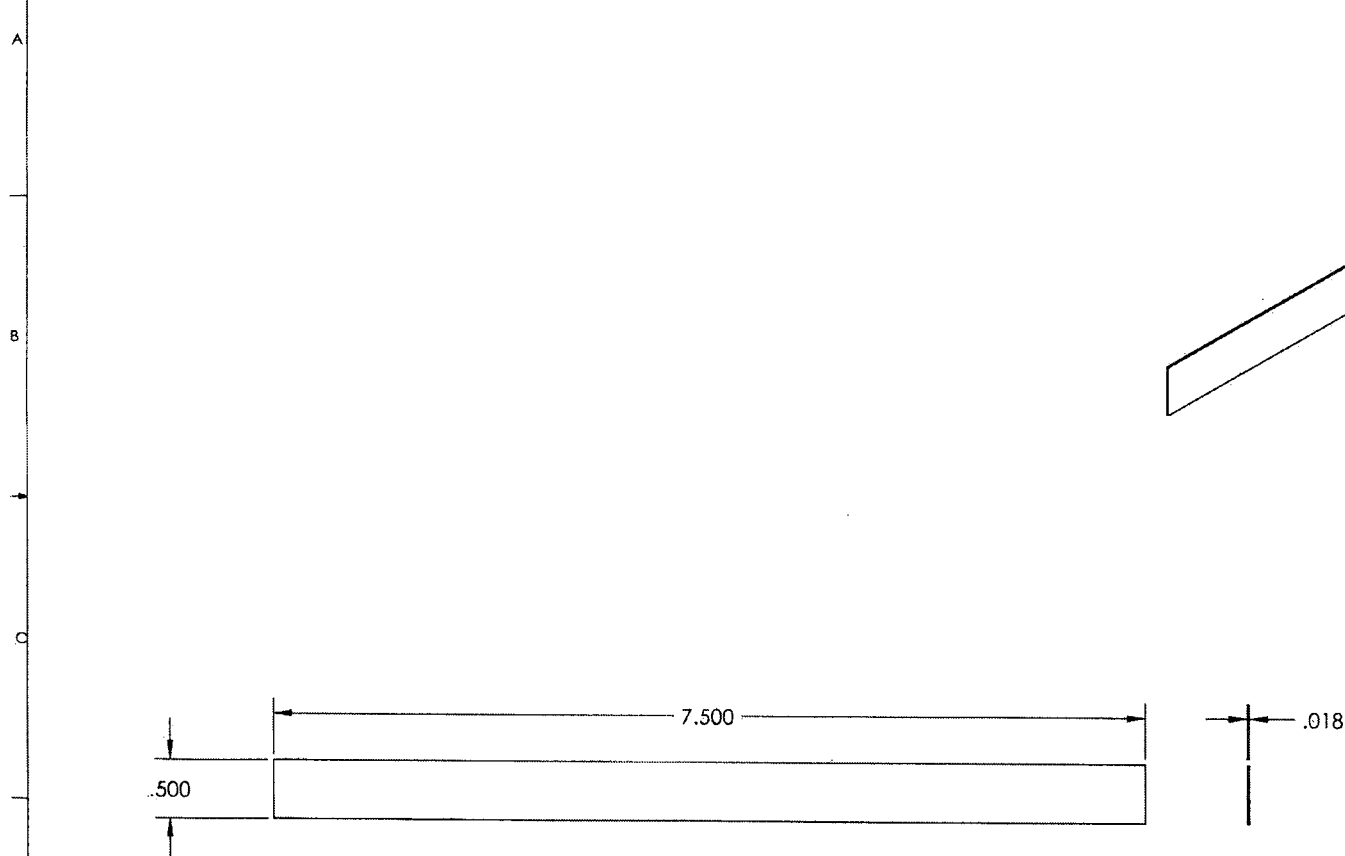
647.7917
647.7918 OPPOSITE



647.7917 SHOWN
647.7918 OPPOSITE

ORIGINAL DATE (MM/DD/YY) 11/23/09		APICAL INDUSTRIES	
DRAWN BY E. ANDERSON	CHECKED P. BRAVO	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL P. BRAVO 11/23/09		SHEET METAL	
CONTRACT NO.		SIZE B	REV. N/C
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 Holes ±.01		CAGE CODE 07M16	DWG. NO. 647.7900
SCALE NONE		SHEET 8 OF 9	

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



ORIGINAL DATE	
(MO-JA-YR)	11-23-09
DRAWN BY	CHECKER
E. ANDERSSON	P. BRAVO
DRAWING APPROVAL	
P. BRAVO	
11-23-09	
CONTRACT NO.	

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA, 92056-3512 (760) 724-5300

SHEET METAL

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ± 0.1
3 PLACE DECIMALS ± 0.005
ANGLES $\pm 5^\circ$

SIZE B	CAGE CODE 07M26	DWG. NO. 647.7900	REV. N/C
SCALE NONE		SHEET 9 OF 9	

SCALE NONI



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO36731

Purchase Order Date 6/16/2017

PO Print Date 6/28/2017

Page Number 7 of 16

Order From :

VC-ATG001

Ship To : DART AEROSPACE LTD

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

613-446-4544

Ship To Contact

Ship To Phone

Ship Via:

VENDOR'S TRUCK

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Total: \$126.40

15 161784

647.4211 BRACKET
REV. N/C

7/7/2017

16.00

\$7.90

\$126.40

Yes

7/7/2017

AS PER MPP-172 SECTION 2.1,
HARD ANODIZE COLOR BLACK, PER IAW MIL-A-8625 TYPE 3 CLASS 2
AS PER MPP-172 SECTION 4.2,
PRIME AS PER IAW MIL-PRF-23377 TYPE 1 CLASS N

Line Total: \$126.40

6 161782

647.7911 BRACKET
REV. N/C

7/7/2017

4.00

\$6.90

\$27.60

Yes

7/7/2017

AS PER MPP-172 SECTION 2.1,
HARD ANODIZE COLOR BLACK, PER IAW MIL-A-8625 TYPE 3 CLASS 2
AS PER MPP-172 SECTION 4.2,
PRIME AS PER IAW MIL-PRF-23377 TYPE 1 CLASS N

Line Total: \$27.60

PO Instructions: PRIMER IS SUPPLIED BY DART

Note:

6/28/2017

JUL 10 2017

DAS
26
9-89



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913502

Date: 07-Jul-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
	Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.		
8 ea	Part: 646.3010 LH Half Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21224	Rev: N/C PO: PO36731	Line: 1
4 ea	Part: 647.7911 Bracket Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21239	Rev: N/C PO: PO36731	Line: 16 DAS 38 9-89 DAS 26 9-89 JUL 10 2017
9 ea	Part: 646.3011 RH Half Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21225	Rev: N/C PO: PO36731	Line: 2
26 ea	Part: 646.3716 Gauge Bracket Hard Black Anodize per MIL-A-8625F, Type III, Class 2, .0005-.0045" (.5 - 4.5mils) Prime per MIL-PRF-23377, Type I, Class N (Customer Supplied), .0006-.0009" (.6 - .9 mils) per drawing. Job: 21230	Rev: A PO: PO36731	Line: 7
CERTIFICATE OF CONFORMANCE A.T.G Industries Inc. certifies that all items in this shipment conform to the requirements. Date: <u>07/07/2017</u> Made in Canada.			



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 913502

Date: 07-Jul-17

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Chantal Lavoie
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms	Ship Via												
<table border="1"><thead><tr><th>Quantity</th><th>Description</th></tr></thead><tbody><tr><td></td><td>Certified Signature: </td></tr><tr><td></td><td>Receiver Signature: _____</td></tr><tr><td></td><td>A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited.</td></tr><tr><td></td><td>Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.</td></tr><tr><td></td><td> DAS 26 9-89 JUL 10 2017 </td></tr></tbody></table>		Quantity	Description		Certified Signature: 		Receiver Signature: _____		A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited.		Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.		DAS 26 9-89 JUL 10 2017
Quantity	Description												
	Certified Signature: 												
	Receiver Signature: _____												
	A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited.												
	Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.												
	DAS 26 9-89 JUL 10 2017												

Made in Canada.